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Phospho-rat TSC1(Y297) Antibody

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP3832a

Product Information

Application	DB, E
Primary Accession	Q9Z136
Other Accession	NP_068626.1
Reactivity	Rat
Predicted	Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB41272
Calculated MW	129022

Additional Information

Gene ID	60445
Other Names	Hamartin, Tuberous sclerosis 1 protein homolog, Tsc1
Target/Specificity	This rat TSC1 Antibody is generated from rabbits immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding Y297 of rat TSC1.
Dilution	DB~~1:500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Phospho-rat TSC1(Y297) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	Tsc1 {ECO:0000303|PubMed:10029074, ECO:0000312|RGD:620124}
Function	Non-catalytic component of the TSC-TBC complex, a multiprotein complex that acts as a negative regulator of the canonical mTORC1 complex, an evolutionarily conserved central nutrient sensor that stimulates anabolic reactions and macromolecule biosynthesis to promote cellular biomass

	generation and growth (By similarity). The TSC-TBC complex acts as a GTPase-activating protein (GAP) for the small GTPase RHEB, a direct activator of the protein kinase activity of mTORC1 (By similarity). In absence of nutrients, the TSC-TBC complex inhibits mTORC1, thereby preventing phosphorylation of ribosomal protein S6 kinase (RPS6KB1 and RPS6KB2) and EIF4EBP1 (4E-BP1) by the mTORC1 signaling (By similarity). The TSC-TBC complex is inactivated in response to nutrients, relieving inhibition of mTORC1 (By similarity). Within the TSC-TBC complex, TSC1 stabilizes TSC2 and prevents TSC2 self-aggregation (PubMed:16707451). Involved in microtubule-mediated protein transport via its ability to regulate mTORC1 signaling (PubMed:16707451). Also acts as a co-chaperone for HSP90AA1 facilitating HSP90AA1 chaperoning of protein clients such as kinases, TSC2 and glucocorticoid receptor NR3C1 (By similarity). Increases ATP binding to HSP90AA1 and inhibits HSP90AA1 ATPase activity (By similarity). Competes with the activating co-chaperone AHSA1 for binding to HSP90AA1, thereby providing a reciprocal regulatory mechanism for chaperoning of client proteins (By similarity). Recruits TSC2 to HSP90AA1 and stabilizes TSC2 by preventing the interaction between TSC2 and ubiquitin ligase HERC1 (By similarity).
Cellular Location	Lysosome membrane {ECO:0000250|UniProtKB:Q92574}; Peripheral membrane protein {ECO:0000250|UniProtKB:Q92574}. Cytoplasm, cytosol {ECO:0000250|UniProtKB:Q92574}. Note=Recruited to lysosomal membranes in a RHEB-dependent process in absence of nutrients. In response to nutrients, the complex dissociates from lysosomal membranes and relocalizes to the cytosol. {ECO:0000250|UniProtKB:Q92574}
Tissue Location	Highly expressed in brain, spleen and kidney, followed by liver and heart.

Background

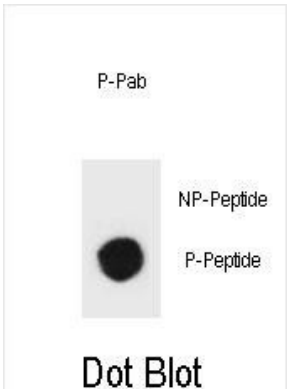
In complex with TSC2, inhibits the nutrient-mediated or growth factor-stimulated phosphorylation of S6K1 and EIF4EBP1 by negatively regulating mTORC1 signaling (By similarity). Implicated as a tumor suppressor. Involved in microtubule-mediated protein transport, but this seems to be due to unregulated mTOR signaling (By similarity).

References

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Chen, P., et al. Exp. Mol. Pathol. 86(2):101-107(2009)
Momose, S., et al. Biochem. Biophys. Res. Commun. 356(3):693-698(2007)
Goncharova, E., et al. J. Cell Biol. 167(6):1171-1182(2004)

Images

Dot blot analysis of rat TSC1 Antibody (Phospho Y297) Phospho-specific Pab (Cat. #AP3832a) on nitrocellulose membrane. 50ng of Phospho-peptide or Non Phospho-peptide per dot were adsorbed. Antibody working concentrations are 0.6ug per ml.



Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.